

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:**Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-025117**Date Inspected:** 09-Jul-2011**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site**CWI Name:** See Below**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Orthotropic Box Girder**Summary of Items Observed:**

At the start of the shift the Quality Assurance Inspector (QAI) traveled to the project site and observed the work and the inspection performed by American Bridge/Fluor Enterprises (AB/F) personnel. The inspection was performed on the various field fit-up of weld joints and the Complete Joint Penetration (CJP). The welding was performed utilizing the Fluxed Cored Arc Welding (FCAW-G) and the Sugmerged Arc Welding (SAW) Process.

**A). OBG 11W/12W**

The QAI observed the SAW process of the "A" deck field splice identified as Weld Number (WN): 11W-12W-A. The welding was performed by the welding operator James Zhen ID-6001utilizing the Welding Procedure Specification (WPS) ABF-WPS-D15-4042B-1 Rev. 0. The WPS was also used by the QC Inspector, Patrick Swain, as a reference to monitor the welding and to verify welding parameters which were verified and noted as follows by the QC inspector; 562 amps, 32.0 volts and a travel speed measured at 392 mm per minute.

**B). OBG 11E/12E**

The QAI observed the CJP welding of the side plate field splices identified as Weld Number (WN): 11E-12E-C and E. The welding was performed by Wai Kitlai ID-2953 and Hua Qiang Hwang ID-2930utilizing the FCAW-G process as per the Welding Procedure Specification (WPS) ABF-WPS-D15-1040A, Rev. 1. The WPS was also utilized by the QC Inspector Fred Von Hoff as a reference when monitoring the welding and verifying the welding parameters. The in process welding and inspection appeared to comply with the contract specifications.

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## C). Sole Plates

The QAI observed the fit-up and fillet welding of the sole plates to the Orthotropic Box Girder (OBG) W9 and to the number 12 Cross Beam which are to be utilized as part of the pipe support system. These sole plates are located approximately at the Panel Point (PP) 81. The welding was performed by Rick Clayborn ID-2773 utilizing the WPS identified as ABF-WPS-D15-F2200-1. The QAI also observed the QC inspector perform the visual inspection and verify the welding parameters during the production welding. The inspections performed by Mr. Swain appeared to comply with the contract specifications. The welding of the the sole plates was not completed during this scheduled shift.

## D). QA Verification

This QAI performed a Magnetic Particle (MPT) verification test on various Complete Joint Penetration (CJP) groove welds. A total area of approximately 10% was randomly tested to verify the weld and testing by QC meet the requirements of the contract documents. For additional information and locations see the MPT test reports identified, TL-6028, generated on this date.

This QA Inspector also performed a daily review and update of the field document control tracking records regarding the Orthotropic Box Girders, Longitudinal and Transverse "A" Deck Stiffeners and Deck Access Holes.

## QA Summary

The welding was performed in the flat and overhead positions utilizing the, E71T-1 and EM12K wire consumables. The 3.2 mm and 4.0 mm electrodes were stored in electrically heated, thermostatically controlled oven after removal from the sealed containers. The exposure limits of the electrodes appeared to comply with the minimum storage oven temperature of 120 degrees Celsius as per the contract documents. The welding parameters and surface temperatures were verified by the QC inspector's utilizing a Fluke 337 clamp meter to measure the electrical welding parameters and Tempil Heat Indicators for verifying the preheat and interpass temperatures. At the time of the observation no issues were noted by the QAI.

The digital photographs below illustrate some of the work observed during this scheduled work date.



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### Summary of Conversations:

There were general conversations with Quality Control Lead Inspector, Bonifacio Daquinag, Jr., at the start of the shift regarding the location of welding, inspection and N.D.E. testing personnel scheduled for this shift.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy (510) 385-5910, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Reyes,Danny	Quality Assurance Inspector
<b>Reviewed By:</b>	Levell,Bill	QA Reviewer

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